

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference O. Z. 6297-WO	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/EP2004/051009	International filing date (day/month/year) 03.06.2004	Priority date (day/month/year) 25.07.2003
International Patent Classification (IPC) or national classification and IPC C08K3/00, C08K3/32, C08K3/28, C08K5/098		
Applicant DEGUSSA AG		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising: a. <input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows: <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items: <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

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Box No. I

Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language _____ which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-17 _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- nos. 1-36 _____ as originally filed/furnished
- nos.* _____ as amended (together with any statement) under Article 19
- nos.* _____ received by this Authority on _____
- nos.* _____ received by this Authority on _____
- ☐ the drawings:
- sheets _____ as originally filed/furnished
- sheets* _____ received by this Authority on _____
- sheets* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	1-36	YES
	Claims		NO
Inventive step (IS)	Claims	1-36	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-36	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

This report makes reference to the following documents:

D1: EP-A-0 686 661 (CHISSO CORP) 13 December 1995
(1995-12-13)

D2: EP-A-1 179 568 (ASAHI CHEMICAL IND)
13 February 2002 (2002-02-13)

D3: US-B1-6 245 281 (SCHOLTEN HEINZ ET AL)
12 June 2001 (2001-06-12)

D4: US-A-6 136 948 (FORDERHASE PAUL F ET AL)
24 October 2000 (2000-10-24)

In D1 coated ammonium polyphosphates as flame retardants are mixed to give polymers, for example, polyamides as per the application (see page 13, lines 6-10). Polymeric powders are not disclosed.

D2 discloses polyamide compositions which contain fatty acid salts (see paragraph 0039 and the claims) and, optionally, also flame retardants: for example, ammonium polyphosphate (see list in paragraph 0091). Polyamide can also be present in powder form in the mixing process (see paragraph 0059), in particular when incorporating the apatite constituent. Paragraphs 0015-0021 disclose the

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
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starting materials for polyamide preparation. Flame retardant-containing, polymer-containing sintering powders are not disclosed.

Neither D1 nor D2 discloses polymer-containing, flame retardant-containing sintering powders.

Neither D1 nor D2 contains any teaching concerning the providing of polymeric, flame retardant-containing powders.

D3 and D4 disclose polyamide powders with particle sizes as per the application and polyamides as per the application for use as per the application. Processes for producing shaped bodies from powders by, for example, selective sintering are also disclosed. Ammonium polyphosphate as per the application and fatty acid salts are not disclosed.

Therefore, the novelty (PCT Article 33(2)) of claims 1-36 over D1-D4 can be acknowledged.

Proceeding from D3 and/or D4 as the closest prior art, a person skilled in the art addressing the technical problem of producing further flameproof sintering powders would find no inducement in the cited prior art to use ammonium polyphosphate as a flame retardant for this purpose. The application shows that powders containing the indicated flame retardant demonstrate better flame-retardant properties than powders not containing the flame retardant. This would not seem surprising to a person skilled in the art. However, the above-indicated

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problem appears to be inventively solved since 1.) The use in polymeric powders of ammonium polyphosphates as additives is not suggested in the prior art and 2.) whether the sintering powders would retain the further properties necessary for their use, for example, flowability, selective sinterability, etc., on the addition of ammonium polyphosphate could not be foreseen.

Therefore, claims 1-36 involve an inventive step (PCT Article 33(3)).